## 27th SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (E3) Poster Session (P)

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## BASICS OF FINANCIAL SUPPORT OF RESEARCH AND DEVELOPMENT ACTIVITIES IN THE RUSSIAN SPACE INDUSTRY

## Abstract

Today the Russian space industry is presented by the following key lines of activities: fundamental and applied scientific investigations, design and development activities, spacecraft (SC) and ground equipment manufacturing, rocket engineering, SC launch services, space communication systems, Earth remote sensing services, navigation, manned space exploration. For a scientific and production association which is operating at the research and development (RD) market, especially in the field of space research, it is vital to support the balance of expenses, timescales and quality level, acceptable for the current projects, considering the availability and status of existing funds, as well as the real market situation. At any time within the context of economic and innovative risks there can be an unforeseen technical or technological problem or a need for the urgent redistribution of financial, human and material resources. Therefore, any planning and managerial system for RD activities shall have enough flexibility. The space RD activities demand even more flexibility of managerial decisions than in any other field. The financial coverage limited by the government and tight schedules of spacecraft development impose severe restrictions and demand a new approach to the organization of research and operation when both fulfilling the assignment of the Federal Space Agency (Roscosmos) and the Russian Defense Order (Rosoboronzakaz) and when evaluating the results of fulfillment of such assignments. The outcome of 2012-2013 period has proved that the special emphasis shall be put to the quality of SC and ground equipment assembling. The modern economic manner of RD management in the field of space research has a number of specific features. First, the economic mechanism of RD management is intended to consider an uncertainty factor in economic and innovative area and a time-limitation factor, peculiar to development of new hi-tech unique production. Secondly, the RD price mechanism, methodology of the limit prices formation for development of new space production is adjusted by the government. Thirdly, often it takes a sufficiently long time from the first research phases aimed at development of a new spacecraft till the launch campaign. Thus the forecasting of long-run RD becomes very important considering eventual inflation and many other external and internal factors. Fourthly, the mechanism of responsibility insurance plays a major role at RD activities during all phases starting from development till the SC launch. Therefore we have developed a special philosophy of economic and technological risks insurance both for development and operation of spacecraft.